

10

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Abstract

At least one of the interior wall of a reactor and a susceptor installed in the reactor is coated with an $\text{Al}_a\text{Ga}_b\text{In}_c\text{N}$ ($a+b+c=1$, $a>0$) film, which is heated to about 1000°C or more when a substrate is heated to a predetermined temperature so as to generate a MOCVD reaction between a Group III raw material gas and a Group V raw material gas. A $\text{Al}_p\text{Ga}_q\text{In}_r\text{N}$ ($p+q+r=1$) compound generated from the raw material gases is deposited on the coated $\text{Al}_a\text{Ga}_b\text{In}_c\text{N}$ ($a+b+c=1$, $a>0$) film, and thus, contaminant particles of the $\text{Al}_p\text{Ga}_q\text{In}_r\text{N}$ compound are substantially decreased. As a result, the epitaxially grown $\text{Al}_x\text{Ga}_y\text{In}_z\text{N}$ ($x+y+z=1$) film is not affected by the contaminant particles, and can have a desired crystalline quality.

Substitute abstract